FIG. 1

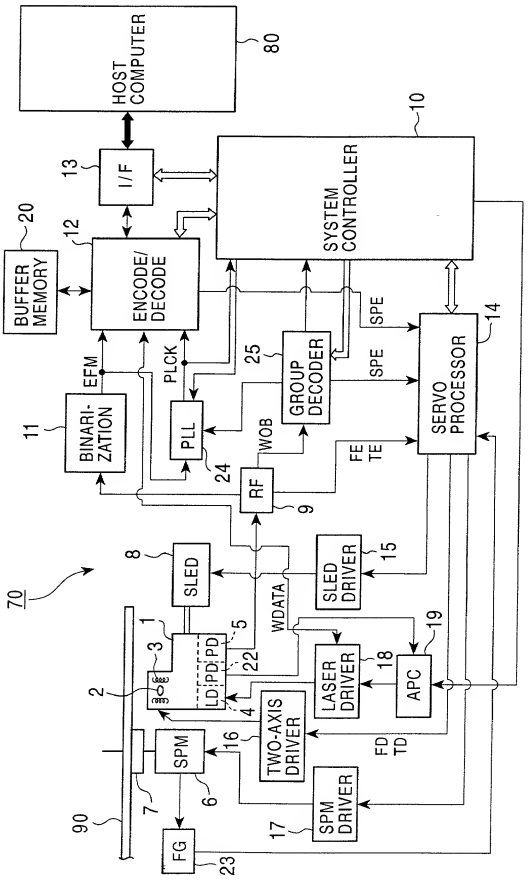

HOST COMPUTER
80
I/F
13
SYSTEM CONTROLLER
10
BUFFER MEMORY
20
ENCODE/ DECODE
12
BINARI-ZATION
11
EFM
PLCK
PLL
24
WOB
GROUP DECODER
25
SPE
SERVO PROCESSOR
14
FE
TE
RF
9
70
SLED
8
SLED DRIVER
15
WDATA
LD
PD
1
3
5
22
2
4
LASER DRIVER
18
APC
19
FD
TD
SPM
16
TWO-AXIS DRIVER
6
7
SPM DRIVER
17
FG
23
90

FIG. 2

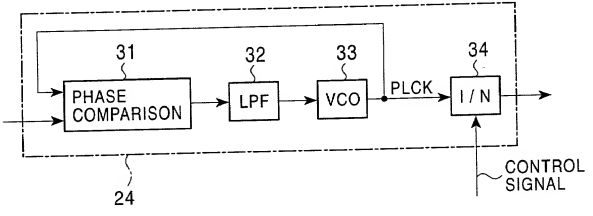


FIG. 3A

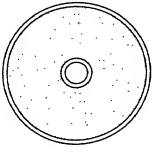
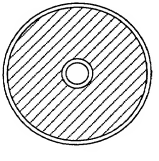


FIG. 3B



09600660 "07100T

FIG. 4

	STSNDARD DENSITY	HIGH DENSITY
USER DATA CAPACITY	650 Mbytes (120 mm) 195 Mbytes (80 mm)	1.30 Gbytes (120 mm) 0.40 Gbytes (80 mm)
PROGRAM AREA START POSITION (RADIUS)	50 mm	48 mm
CENTER HOLE DIAMETER	15 mm	15 mm
DISK THICKNESS	1.2 mm	1.2 mm
TRACK PITCH	1.6 μm	1.10 μm
SCANNING SPEED	1.2～1.4 m/s	0.90 m/s
LASER WAVELENGHT	780 nm	780 nm
MODULATION METHOD	0.45	0.55
NA	EFM	EFM
ERROR-CORRECTION METHOD	CIRC4	CIRC7
CHANNEL BIT RATE	4.3218 Mbps	4.3218 Mbps

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DOCKET #: 21081SUS6
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FIG. 5

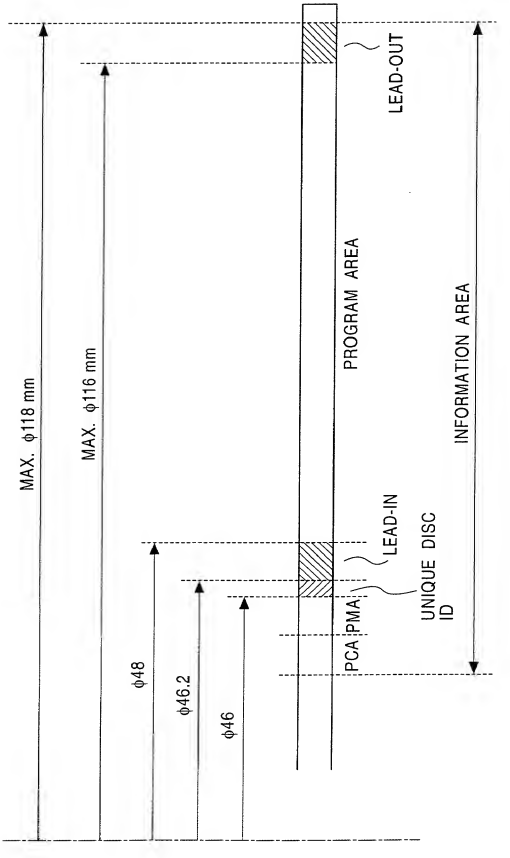

MAX. φ118 mm
MAX. φ116 mm
φ48
φ46.2
φ46
LEAD-OUT
PROGRAM AREA
LEAD-IN
UNIQUE DISC ID
PCA
PMA
INFORMATION AREA

FIG. 6

COUNTRY CODE	2 BYTES
DISC MANUFACTURE DATE	1 BYTE
DISC MANUFACTURE NAME	2 BYTES
DISC ID	8 BYTES
WRITER MANUFACTURE NAME	1 BYTE
WRITER SERIAL NUMBER	2 BYTES
WRITER MODEL NAME	1 BYTE
RESERVE	⋮

1001/01500660

FIG. 7

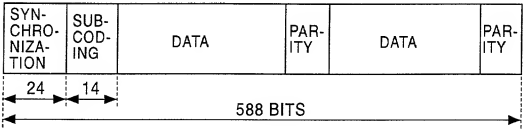


FIG. 8A

FRAME	SUBCODING FRAME							
98n + 1	SYNCHRONIZATION PATTERN							
98n + 2	SYNCRHONIZATION PATTERN							
98n + 3	P1	Q1	R1	S1	T1	U1	V1	W1
98n + 4	P2	Q2	R2	S2	T2	U2	V2	W2
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
98n + 97	P95	Q95	R95	S95	T95	U95	V95	W95
98n + 98	P96	Q96	R96	S96	T96	U96	V96	W96
98(n+1) + 1								

FIG. 8B

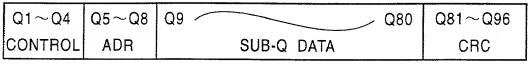


FIG. 9

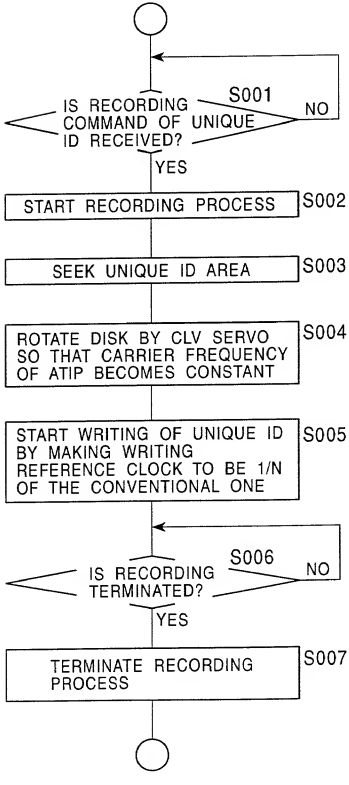

IS RECORDING COMMAND OF UNIQUE ID RECEIVED?
S001
NO
YES
START RECORDING PROCESS
S002
SEEK UNIQUE ID AREA
S003
ROTATE DISK BY CLV SERVO SO THAT CARRIER FREQUENCY OF ATIP BECOMES CONSTANT
S004
START WRITING OF UNIQUE ID BY MAKING WRITING REFERENCE CLOCK TO BE 1/N OF THE CONVENTIONAL ONE
S005
IS RECORDING TERMINATED?
S006
NO
YES
TERMINATE RECORDING PROCESS
S007

FIG. 10

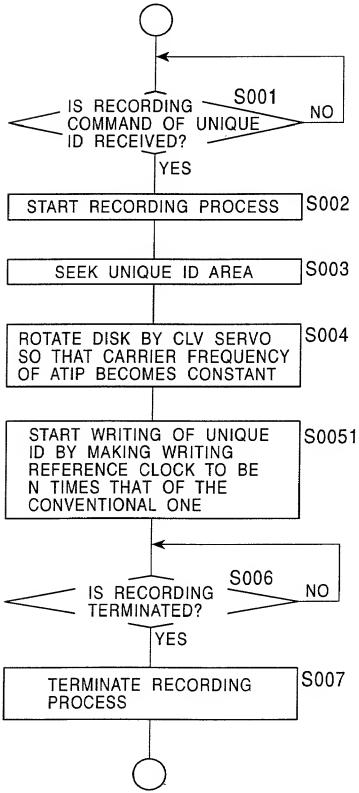

IS RECORDING COMMAND OF UNIQUE ID RECEIVED?
S001
NO
YES
START RECORDING PROCESS
S002
SEEK UNIQUE ID AREA
S003
ROTATE DISK BY CLV SERVO SO THAT CARRIER FREQUENCY OF ATIP BECOMES CONSTANT
S004
START WRITING OF UNIQUE ID BY MAKING WRITING REFERENCE CLOCK TO BE N TIMES THAT OF THE CONVENTIONAL ONE
S0051
IS RECORDING TERMINATED?
S006
NO
YES
TERMINATE RECORDING PROCESS
S007

FIG. 11

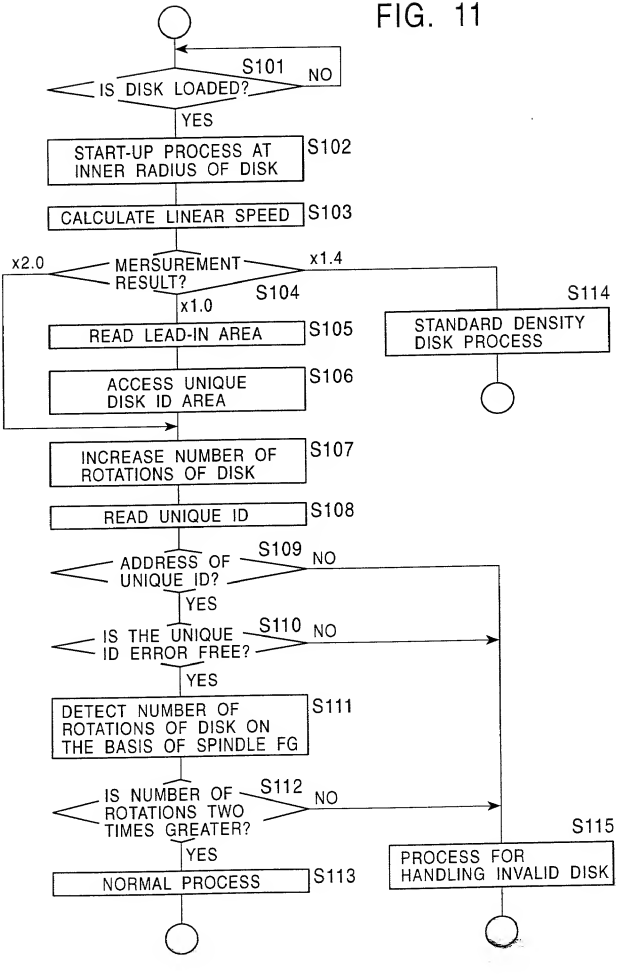
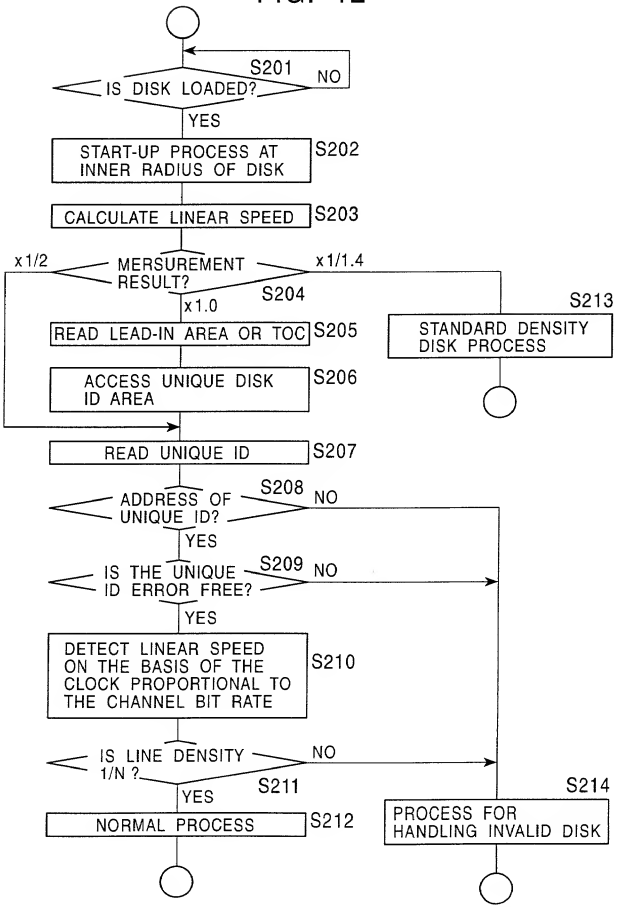

S101
IS DISK LOADED?
NO
YES
START-UP PROCESS AT INNER RADIUS OF DISK
S102
CALCULATE LINEAR SPEED
S103
x2.0
MERSUREMENT RESULT?
x1.4
S104
x1.0
S114
STANDARD DENSITY DISK PROCESS
READ LEAD-IN AREA
S105
ACCESS UNIQUE DISK ID AREA
S106
INCREASE NUMBER OF ROTATIONS OF DISK
S107
READ UNIQUE ID
S108
S109
ADDRESS OF UNIQUE ID?
NO
YES
S110
IS THE UNIQUE ID ERROR FREE?
NO
YES
DETECT NUMBER OF ROTATIONS OF DISK ON THE BASIS OF SPINDLE FG
S111
S112
IS NUMBER OF ROTATIONS TWO TIMES GREATER?
NO
YES
S115
PROCESS FOR HANDLING INVALID DISK
NORMAL PROCESS
S113

FIG. 12


S201
IS DISK LOADED?
NO
YES
START-UP PROCESS AT INNER RADIUS OF DISK
S202
CALCULATE LINEAR SPEED
S203
x1/2
MERSUREMENT RESULT?
x1/1.4
S204
x1.0
S213
STANDARD DENSITY DISK PROCESS
READ LEAD-IN AREA OR TOC
S205
ACCESS UNIQUE DISK ID AREA
S206
READ UNIQUE ID
S207
S208
ADDRESS OF UNIQUE ID?
NO
YES
S209
IS THE UNIQUE ID ERROR FREE?
NO
YES
DETECT LINEAR SPEED ON THE BASIS OF THE CLOCK PROPORTIONAL TO THE CHANNEL BIT RATE
S210
IS LINE DENSITY 1/N ?
NO
YES
S211
NORMAL PROCESS
S212
S214
PROCESS FOR HANDLING INVALID DISK